ZOOLOGY.

Fresh-Water Sponges.—Prof. D. S. Kellicott has arranged the fresh-water sponges collected by the late Henry Mills and has published an account of them[1] with a key to the genera. Sixteen species are enumerated. Prof. Kellicott regards the region around Buffalo bay as affording ideal conditions for a fresh-water fauna as the water remains at an almost constant level, and with comparative moderate changes in temperature.

Parasites of Salmon.—F. Zschokke,[2] after a careful study of the parasites of *Salmo salar*, the author comes to the following conclusions: 1. Thirty-three species of helminths infest the salmon; 2. The habits of *S. salar* differ in different bodies of fresh water, for (a) the absence of fresh water parasites in the Rhine salmon shows that in this stream no food is taken by them, (b) the occasional presence of fresh water parasites in the salmon of the Tay proves that food is occasionally taken in that stream, (c) while the very frequent presence of fresh water parasites in the salmon of the Baltic Sea shows that it is the regular custom of this fish to feed in the rivers and brackish water of that region.—C. W. Stiles.

Anatomy of Stenostoma.—H. N. Ott publishes[3] a preliminary note on the structure of this Rhabdocœlous Turbellarian which is essentially like most Microstomidæ, the relations of the muscles of the body walls which is called peculiar, being the normal condition in the Turbellaria. The olfactory pits are imbedded directly in the brain. In fission a constriction of the ectoderm precedes alteration of the entoderm.

The Systematic Position of Orthelosoma.—L. v. Graaf has had an opportunity to study the type of this genus in the British Museum, described by the late J. E. Gray as a slug. He finds[4] that, as Leuckart had previously supposed, this so-called mollusc is in reality a land Planarian, closely allied to Rhynchodesmus. Von Graaf states

[1]Bulletin Buffalo Soc. Nat. Sci., V., p. 99, 1891.

[2]Die Parasitenfauna von Trutta salar, in Centralblatt für Bakt. u. Parasitenkunde, 1891, Vol. x, No. 21–25.

[3]Zool. Anz. xv., p. 9., 1892.

[4]Zool. Anz. xv., p. 8., 1892.

that the type of Guilding's Herpa from the West Indies is not to be found. It was also described as a mollusc, but it has Planarian characters.

Haplodiscus.—L. von Graaf[1] gives his opinion of Weldon's *Haplodiscus piger* from the Bahamas, which was thought by its describer to be possibly allied to the Cestodes or Trematodes. It is, says von Graaf, an acœlous Turbellarian, with zooanthellæ, with central mouth, two genital openings and apparently with a chitinous terminal portion to the bursa. These characters would assign it to the genus Convoluta.

Echinorhynchi in America.—It has long been known that the swine in this country are commonly affected with these parasites. Dr. C. W. Stiles has recently solved the problem of the intermediate host of the worm (Zool. Anz. xv, p. 52, 1892). In Europe it had been demonstrated that two or three of the Scarabæid beetles acted as such host and so they were used as the basis of experiment here. Eggs of Echinorhynchus were sprinkled on the food (tender roots, etc.) of the larvæ of Lachnosterna and subsequent investigation showed that the larvæ were distended with the young. As farmers are in the habit of turning their hogs into fields which are infested with the 'white grubs'—larvæ of the June bugs—it is easy to see how the parasites can be communicated to the swine, provided, of course, that the grubs be affected. On the other hand the grubs may be readily infected from the fæces of a single infested hog.

The Species of Panopæus.—James E. Benedict and Mary J. Rathbun monograph[2] the species of this essentially American genus of Cancroid Crustaceans. Eurytium and Eurypanopeus are included as synonyms. Twenty-four species have been examined and as a supplement a list of fifteen more nominal species is given of which no specimens have been seen. Some three thousand specimens were examined in the preparation of the paper. The present writer once studied this genus but did not publish his results. He is of the opinion that the number of species here admitted is about three times too large, for the species are very variable.—K.

Pycnogonid Studies.—Schimkewitsch[3] revises the species of the genera Phoxichilus and Tanystylum. In the introduction Wilson's

[1]Zool. Anz. xv., p. 6, 1892.
[2]Proc. U. S. Nat. Mus., xiv, 355, 6 pls., 1891.
[3]Arch. Zool. Exp., ix, 503, 1891.

genera Anoplodactylus and Scæorhynchus are regarded as synonyms of Phoxichilidium and Eurycyde respectively.

Gamasid Mites and Ants.—Mr. A. D. Michael, in a paper read before the Zoological Society of London, Dec. 1st, 1891, came to the following conclusions: (1) That there is an association between some Gamasids and Ants; (2) That a species of Gamasid usually associates with one or two species of Ants preferentially; (3) That the Gamasid of ants nests are not usually found elsewhere; (4) That the Gamasid abandons the nest if the Ant does; (5) That the Gamasids live upon friendly terms with the Ants; That the Gamasids are not true parasites; (7) That they do not injure the Ants or their young; (8) That the Gamasids will eat dead Ants, and are probably either scavengers or messmates.

Lepidoptera of Buffalo.—E. P. van Duzee publishes[1] a list of the Macro-Lepidoptera of the vicinity of Buffalo, N. Y. In all 777 species are enumerated. In the arrangement W. H. Edwards is followed for the butterflies and Aug. Grote for the Moths excepting the Sphingidæ and Agrotidæ, where J. B. Smith has been followed, and the Phycidæ, which are arranged according to G. D. Hulst.

The Position of the Solenoconchæ.—Dr. L. Plate,[2] after a brief account of the structure of Dentalium, Siphonodentalium, Siphonentalis and Cadulus, concludes that these forms show more relationship to the Gasteropods than to the Lamellibranchs in "(1) the unpaired shell; (2) the radula; (3) the jaws; (4) the tentacles, which can only be homologized with those of the Gasteropods; (5) the body retractors, which in origin and position correspond to the spindle muscles; (6) the pleural ganglia, which among the Lamellibranchs occur only in the Nuculidæ, forms which otherwise show no special similarity to the Dentalia; (7) the strong development of the buccal nerve centres; (8) the œsophageal glands, which from position are to be homologized with the salivary glands of the Gasteropods. Grobben's hypothesis that 'the Dentalia are to be regarded as the survivors of an ancestral form and especially the ancestors of the Cephalopod' is supported [upon the supposition that] the arms of the cuttle fishes, as appendages of the head, are homologous to tentacles of the Solenoconchæ. It appears to me that recently the pedal nature of the

[1]Bulletin Buffalo Soc. Nat. Sci., V., p. 105, 1891.

[2]Verh. Deutsch. Zool. Gesellsch. i. 60, 1891.

Cephalopod arms has been certainly shown.'" Prof. Grobben at the same meeting replied saying, among other things, that the radula and pleural ganglia had no diagnostic value, since there was some evidence that the ancestors of the Lamellibranchs had a radula which had secondarily been lost, while the existence of the pleural ganglia in the Nuculidæ, the oldest of existing molluscs, had great weight. He had no ground to alter his previous view that the Dentalidæ were the modified descendants of the group from which the Cephalopods had sprung. The arguments advanced by Plate for regarding the arms of the cuttle fishes as pedal were not conclusive. Profs. Bütschli and Leuckart spoke to a similar effect, the latter assigning these forms a middle position between Gasteropods and Lamellibranchs.

The Genera of Enteropneusta.—Prof. Spengel[1] recognizes among the 19 known species of this group four genera, separated most sharply by the body musculature. In Ptychodera alone is there an outer circular musculature; Glandiceps and Schizocardium have inner circular muscles, while in Balanoglossus proper no ring muscles exist. Other differential characters are given. Cephalodiscus is not recognized as a member of the group. No species are mentioned.

Extinct or Nearly Extinct Vertebrates.—Mr. A. F. Lucas has a readable article upon the animals which are recently extinct or threatened with extinction as represented in the National Museum.[2] The West Indian Seal (*Monachus tropicalis*), is uncertainly placed in this category for but little is known of it, and its habits and habitat seem favorable for its perpetuation. The California sea-elephant (*Macrorhinus angustirostris*) is possibly entirely extinct, none having been recorded since 15 were sent in 1884 to the National Museum. The walruses, too, are threatened with extinction, the Pacific species, *Odobœnus obesus*, being in greater danger than the Atlantic *O. rosmarus*. The source of danger lies in the whalers who capture the animals for oil and ivory. Between 1870 and 1880 there was brought to market 1,996,000 gallons of walrus oil, and 398,868 pounds of walrus ivory. In 1879 the ivory was worth 45 cents a pound; in 1880, $1.00 to $1.25; and in 1883, $4.00 to $4.50. The European bison (*Bison bonasus*) which is at present restricted to Lithuania and the Caucasus, is protected in both localities. In 1880 the Lithuanian herds numberd but 600 and the number is smaller at present. The

[1]Verh. Deutschen Zool. Gesellsch. i. 47, 1891.

[2]Report National Museum for 1888-89, p. 609, 1891.

Arctic sea-cow, (*Rytina gigas*), the history of which has already been given in our pages,[1] was exterminated in 1767 or 1768.

Three species of birds from the Hawaian Island are probably extinct. The last ornithological collector who returned from these islands found no specimens of the Mamo (*Drepanis pacifica*), and but about half a dozen specimens represent the species in museums of the world. It was probably exterminated in obtaining feathers to make the yellow war cloaks of the Sandwich Island Kings. The Hawaian *Chætoptila augustipluma* is represented but by two specimens, and the small tailless rail (*Pennula ecaudata*) of the same archipelago is nearly as rare. It would appear that nearly all the native birds of the islands are also threatened with extermination.

The California Vulture (*Pseudogryphus californianus*) is now extremely rare, and largely restricted to Southern California. "The free use of strychnine in ridding the cattle ranches of wolves and coyotes has caused the disappearance of this bird, which has been poisoned by feeding on the carcases prepared for the four-footed scavengers." The Dodo (*Didus ineptus*) of Mauritius, and the Solitaire (*Pezohaps solitaria*) of Rodriguez, have a history too well known to be recounted here. They are represented in the National Museum by a few bones.

So, too, the fate of the Labrador duck (*Camptolæmus labradorius*) and of the great Auk (*Alca impennis*) has often been told. Of the former but 36 specimens are in existence. Two of these in the National Museum were collected by Daniel Webster. The last specimen was taken in 1878. Specimens of the Great Auk are not so rare, and yet they command enormous prices. The last skeleton sold brought $600, the last skin $650 and an egg brought $1500. The Great Auk was probably exterminated in 1840.

Pallas' Cormorant (*Phalacrocorax perspicillatus*) of the region around Kamschatka has a brief history. It was killed by man for food. In 1741 it was "frequentissimi" on Bering Island. About a hundred years later it was extinct and is represented to-day by four stuffed specimens and twenty-three bones in all the museums of the world.

Of the lower vertebrates Mr. True refers to the great Galapagos tortoises and their relatives of the Mascarene Islands, and the Tile fish. The forms have already formed the subject of a paper by Dr. Baur in this Journal[2] and it is only necessary to say that probably

[1] L. Stejneger Am. Nat., xxi, p. 1047, 1887.

[2] Am. Nat. xxiii, p. 1039, 1889.

they are exterminated from another of the Galapagos group. The giant tortoises of the Mascarene Islands were extremely abundant in the seventeenth and eighteenth centuries, but their use as food caused their extinction at the beginning of the present century. "Save the few bones rescued from the marshes of Mauritius and the caves of Rodriguez, nothing is left to show that these large and formerly abundant tortoises ever existed."

The history of the Tile fish (*Lopholatilus chamæleonticeps*) is among the strangest known. So far as we have any information, no one, fisherman or naturalist, ever saw a tile fish (the common name is an abbreviation of the generic) until March 1879, when a Gloucester fishing schooner took about 6000 pounds. In the following years 1880 and 1881 a few were taken by the U. S. Fish Commission Steamer. In March and April 1882 vessels arriving in American ports reported passing through large numbers of dead and dying fish off the southern coast of New England and Long Island. Vessels reported sailing for forty to sixty miles through floating fish, (in one instance through 150 miles) so that it became evident that a vast destruction had taken place. Capt. Collins estimates from these reports that an area of 5000 to 7000 square statute miles were so thickly covered that the total numbers must have exceeded a billion. The next fall the Fish Commission searched in vain for these fish on the ground where they were formerly so abundant; and no one has since reported a specimen.

Zoological News.—Vertebrates.—Carl H. and Rosa H. Eigenman publish[1] a very useful catalogue of the fresh-water fishes of South America. 1135 species are enumerated. The great richness of the fauna in the Nematognathi is here made very prominent, 449 species of that order being enumerated.

Mr. A. J. Allen[2] publishes the first part (Osines) of a catalogue of the birds collected by Mr. Herbert H. Smith at Chapada, Matto Groso, Brazil. Mr. Smith and his party obtained some 6000 skins in this locality and of these some 5500 are utilized in preparing the present paper. In all the collection represents about 350 species in all phases of plumage. 87 species are included in the present paper.

At a meeting of the Zoological Society of London, Feb. 2, 1892, R. Lydekker "described part of an upper jaw of a Sirenian Mammal

[1]Proc. U. S. Nat. Mus., xiv, p. 1–81, 1891.

[2]Bull. Amer. Mus. Nat. Hist., iii, p. 337, 1891.

from the Tertiaries of Northern Italy, containing milk teeth. As these teeth showed a masked Selenodont structure it was urged that the specimen indicated the descent of the Sirenia from the Selenodont Artiodactyle Ungulates;" an exceedingly improbable suggestion.